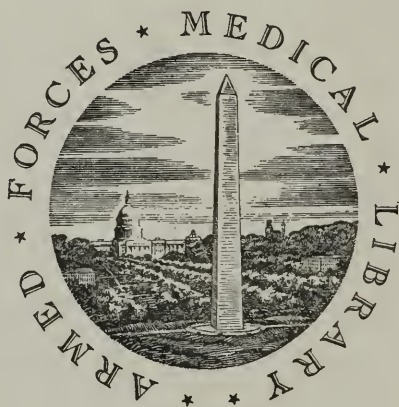


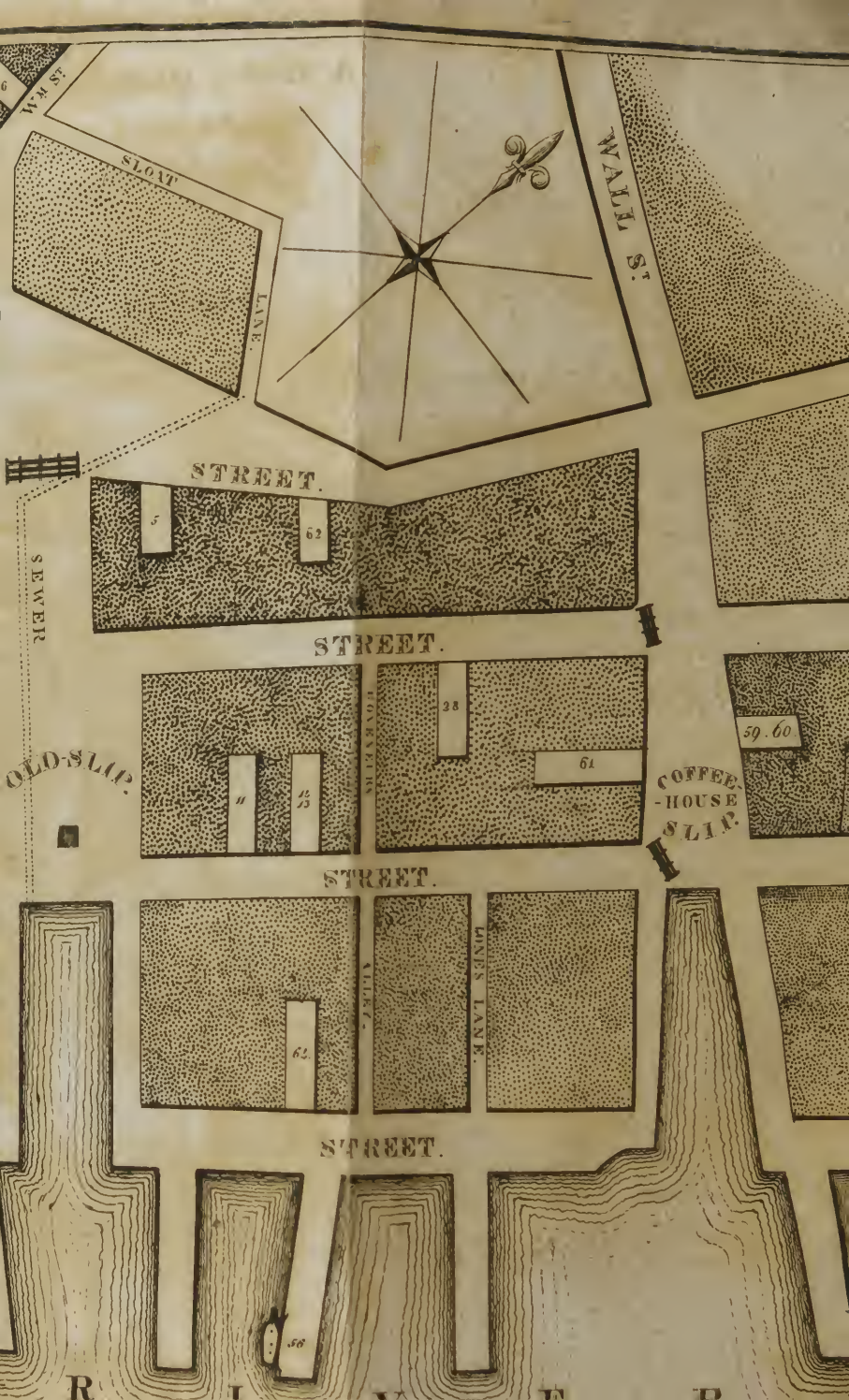
UNITED STATES OF AMERICA



FOUNDED 1836

WASHINGTON, D.C.





WM ST.

SLOAT LANE

WALL ST.

STREET.

SEWER

OLD SLIP.

COFFEE-HOUSE SLIP.

STREET.

STREET.

5

62

28

61

59.60

11

12

62

ALLEY.

LINES LANE.

58

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A
STATEMENT
OF THE
OCCURRENCES DURING
A
MALIGNANT YELLOW FEVER,
IN THE CITY OF NEW-YORK,
IN THE
SUMMER AND AUTUMNAL MONTHS OF
1819;

AND OF THE CHECK GIVEN TO ITS PROGRESS, BY
THE MEASURES ADOPTED BY THE
BOARD OF HEALTH.

WITH A LIST OF CASES AND NAMES OF SICK PERSONS; AND A MAP
OF THEIR PLACES OF RESIDENCE WITHIN THE
INFECTED AND PROSCRIBED LIMITS :

WITH A VIEW OF ASCERTAINING, BY COMPARATIVE ARGUMENTS, WHETHER
THE DISTEMPER WAS ENGENDERED BY DOMESTIC CAUSES, OR
COMMUNICATED BY HUMAN CONTAGION
FROM FOREIGN PORTS.



From look to look *CONTAGIOUS* through the crowd,
The panic runs, and into wondrous shapes
The appearance throws :—

THOMSON'S SPANSONS

NEW-YORK:

PRINTED BY WILLIAM A. MERCEIN,
NO. 93, GOLD-STREET

1819.



Southern District of New-York, ss.

BE IT REMEMBERED, that on the thirtieth day of October, in the forty-fourth year of the Independence of the United States of America, Dr. Felix Pascalis of the said District, hath deposited in this office the title of a Book, the right whereof he claims as Author and Proprietor, in the words and figures following, to wit:

"A Statement of the Occurrences during a Malignant Yellow Fever, in the City of New-York, in the Summer and Autumnal months of 1819; and of the check given to its progress, by the measures adopted by the Board of Health. With a list of cases and names of sick persons; and a map of their places of residence within the infected and proscribed limits: With a view of ascertaining, by comparative arguments, whether the distemper was engendered by domestic causes, or communicated by human contagion from foreign ports.

From look to look *CONTAGIOUS* through the crowd,
The panic runs, and into wondrous shapes
The appearance throws:—————

THOMSON'S SEASONS.

In conformity to the Act of the Congress of the United States, entitled "An Act for the encouragement of Learning, by securing the copies of Maps, Charts, and Books, to the authors and proprietors of such copies, during the time therein mentioned." And also to an Act, entitled "An Act, supplementary to an Act, entitled an Act for the encouragement of Learning, by securing the copies of Maps, Charts, and Books, to the authors and proprietors of such copies, during the times therein mentioned, and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

G. L. THOMPSON,
Clerk of the Southern District of New-York, by
W. IRONSIDE, Dep. Clerk.

SH 11044 NMT
TO THE HON. CADWALLADER D. COLDEN, MAYOR OF
THE CITY OF NEW-YORK, PRESIDENT OF THE BOARD
OF HEALTH, MEMBER OF THE LITERARY AND PHI-
LOSOPHICAL SOCIETY, HONORARY MEMBER OF THE
MEDICAL SOCIETY OF NEW-YORK, &c. &c.

SIR,

IN taking the liberty of placing your name at the head of this little production, which is dedicated to you as a homage of great respect, I am confident that our fellow-citizens who may read it, will immediately call to mind the indefatigable zeal and humanity, also the many laborious hours which you have successfully employed to arrest the ravages, among them, of a severe epidemic. They will think, no doubt, that a public expression of gratitude is due to you and to the Honourable Board over which you preside, for the preservation of lives, for the relief of distress, and for the protection of all classes of citizens, against the evils necessarily arising from public calamities. I, therefore, pride myself on becoming the voluntary organ of public feeling on this occasion. But, permit me, Sir, to add something else, from my conviction that you have done more than what could be expected from a first magistrate; it is, that like a philosopher, you have aimed at the analytical definition of one of those public scourges which are frequently renewed, and never successfully opposed, owing to the discordant opinions and prejudices of mankind. And if the present or future generations of mankind are guided, in the calamity of sickness, by the same example of spirit and fortitude in the guardians of public health,

we may safely trust that they never will again witness, in a great city, the prevalence of a pestilential epidemic.

It has already been your good fortune, Sir, to have, on other occasions, essentially contributed to public good and prosperity. That you may long live to exercise your beneficent virtues and talents, is my unfeigned wish.

In this sentiment I remain,

Sir, with great respect,

Your obedient humble servant,

FELIX PASCALIS.

New-York, October 30th, 1819.

PREFACE.

THERE are few events, the historical narratives of which would be more interesting to mankind, than those of the epidemical distempers which have desolated so many cities and empires, provided they instructed us in the probable causes which have created them, and of the means left to human wisdom in order to stay or avoid their alarming progress. But this, unfortunately, is not the case. We can scarcely open the book of historical records of pestilence and epidemics, (those of the ancients excepted, who had not refined on natural morbid effects by theories of contagion,) but we find exaggerated accounts, and surmised evidences of afflicting distempers being derived from some foreign climes or distant impure regions. Thus has the hope of human ingenuity and comparative observation, in their application of natural laws, been always blasted and defeated. But how inconsistent we are, in adopting this mode of accounting for pestilential diseases, will appear by supposing a traveller, who, from one country to another, from port to port, and from one end of the world to the other, would endeavour to find out the native land of plague or yellow fever. In the more enlightened governments he should happen to visit, and inquire about the discovery he intends to pursue, he would be severely hooted at for supposing he had reached the native soil of pestilence. In the West Indies, he would be shown on a map, the kingdom of Siam in India, or the settlement of Bulam in Africa, or of Vera Cruz in Mexico, as the true native climes of yellow fever. In every port of the United States, he would be emphatically informed that the yellow fever belongs only to the tropical latitudes of America. If he were surprised afterwards to meet with it in the Mediterranean ports of Cadiz, of Gibraltar, and Leghorn, he would be referred to Charleston, South Carolina. Let him visit then the luxuriant fields of the Thracian Bosphorus, and traverse Constantinople, he will be sent to Grand Cairo; and

the proud Egyptian will return the compliment to some other more ignoble country. Thus, our intelligent traveller, convinced that no clime can be found, which, strictly speaking, is the primordial cradle of plague or yellow fever, will most rationally conclude, that, with certain differences of season and external agencies, both diseases may be the offspring of domestic causes.

That this must be the ultimate desideratum of philosophical inquiry, in the late partial epidemic in the city of New-York, the following pages will satisfactorily demonstrate. Should it be advanced that there have been general instances of yellow fever in European ports (from America, as it was supposed) for which no local causes can account, such as those of Gibraltar, of Cadiz, and of Leghorn, I answer, that in the year 1805, I myself was perplexed by the same idea, and that to explain or remove my doubts, I underwent the trouble and expense of a voyage for the exploration of the localities of the two former places; and that I was very soon convinced of the existence, in them both, of the most powerful causes for the breeding of pestilence in certain seasons.

The city or town of Gibraltar is built on a strip of alluvion earth, about two miles long, very narrow, and completely barricadoed against the east wind by the rock of that name. The port is very shallow towards the sea, but gradually shelves deeper and deeper towards the shore, where the largest ships are moored close to the town. There the accumulated filth of the shipping and the inhabitants is precipitated into this deep water, whence it cannot be removed as is usual in other ports, by the washing of the sprays, owing to the abovementioned unfavourable conformation of the bottom; the water of course is black, and constantly bubbling. Therefore, when the east wind blows from the other side of the rock, it is not felt in the town, but its violence is such, as to shut in the atmosphere of the city completely, and prevent its very necessary renewal. As a proof of this, during the continuance of this wind, the bay is perfectly tranquil and unruffled, while at the distance of two miles, the waves abruptly are white with froth, and as if agitated by a tempest.

This wind sometimes lasts forty days, never less than four; and when any disease appears, it is felt by all on that side of the rock from the foot to the airy summit.

The city of Cadiz is built on a rock, surrounded by the sea; the streets are narrow and confined; the houses have only courts, and the whole city is traversed by sewers, which are cleansed by the tides. When the east or Levant wind blows, the water is carried off from the port, the tides are lowered, and can no longer wash the filth from the sewers. Sometimes in the greatest heats of summer, this violent wind* blows fifteen or twenty-one days without intermission, and pestiferous gases from the whole filth of the city are continually emitted through the air-holes of the sewers.—Is there any need, in either of these cases, for an imported contagion, to explain the generation of yellow fever?

I have thus rested the few observations here appended on our late domestic epidemic, on the broad basis of argument against the idea of the importation of yellow fever, to reconcile the facts all have witnessed, with the principles of non-importation and non-contagion. This statement has not been written for controversy with the learned; it is perfectly plain and unornamented with quotations; but I make myself answerable for any medical opinions contained therein; and if any small inaccuracy in the statement of the facts should be met with, I trust it may not militate against the general character of the work. In concluding this preface, I feel it my duty to make a public acknowledgment, to GEORGE B. RAPELYE, Esq. for the accurate and daily reports he has assembled, of all the cases which occurred, and his referring them to their exact localities; by this I have been enabled to make the statement complete, which otherwise would have been very imperfect, owing to the short time which has elapsed and my other professional engagements; at the same time my labours were encouraged by the accurate and impartial observations of his philanthropic mind.

* This is the same as the *Siroco*, a wind renowned for blowing pestilence. Its effects on the human frame are excessively debilitating.

BOARD OF HEALTH,
OF THE CITY OF NEW-YORK.

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Dr. G. C. Quackenboss, *Inspector of Vessels at Quarantine,*

Dr. Benjamin Hicks, and George Mills, *Assistants to the Board of Health.*

Statement of the formation of the Malignant or Yellow Fever, and checked progress, in consequence of the measures adopted by the Board of Health, of the City of New-York, during the period of the summer and fall, 1819.

SECTION I.

NO MALIGNANT FEVER (OR YELLOW FEVER) WAS INTRODUCED INTO NEW-YORK, BY CONTAGION.

TO prove the introduction of Yellow Fever, into our city, by human contagion, it would be necessary to substantiate the arrival of some individual affected with that disease in a defined spot, or that the clothing of some dead person had been brought within its boundaries ; and that these premises should be well ascertained under satisfactory examination, by impartial and competent judges. I say *human contagion*, whether *secreted in* or *excreted from* the human body, to exclude two modes of imported foreign contagion, equally irrelevant to the present instance : the one, that of a foul or unclean vessel from a long voyage, or a warm country, which, as both contending parties admit, is capable of creating the disease, in any person who may be put in contact with its effluvia. But this mode is absolutely inadmissible in the present instance. The second mode is that of any corruptible and damaged article of produce, such as *coffee, hides, cotton, &c.*—being in store as kept for trade or use ; and even then such materials should be classed with our own ordinary causes of domestic yellow fever. As far as my means of inquiry and information have extended, I have not been put in possession of any corresponding fact or circumstance, worthy of the least attention, and I have been the more desirous of obtaining the same, as

for the success of any inquiry, no greater claim to public confidence could be wished for, than the most strict impartiality.

The primordial vehicle of contagion having thus been satisfactorily ascertained, it would be necessary to show its succeeding progress among many individuals, who, by casual or necessary approaches, or by contact, subsequently received the disease, and, also, that each certainly communicated it to others. That were the result to be expected from a subtle and virulent poison brought among us from distant countries; such a one as has, frequently, been traced, by fever-importing partisans, to dirty clothes, and to a bag of coffee, &c. Were this a veritable consequence, it would not, certainly, have failed in the cases of Messrs. John and George Van Nest, the first victims of *yellow fever*, reported to the Board of Health on the 5th of September. These youths, who daily resorted to the store at No. 114, Pearl-Street, and who died in the house of Abraham Van Nest in William-Street, No. 13, the one on the morning of the 5th, the other on the 6th of the same month, must, by that rule, have become an abundant source of contagion to the numerous relations, friends, and neighbours, attending on them and the family. Their two physicians can testify, indeed, that they have, from obvious and proper motives, been obliged, from day to day, to remonstrate against such numerous callings and goings of visitors to and from the sick rooms; that several male and female persons, also, have successively relieved each other, during night, at the bed-side of the much beloved patients. This exposure of many people was increased by that of citizens, who felt anxious at that time, and suspected that the young Van Nests were the first victims of an existing pestilence. Never was the house of a respectable citizen, containing two infec-

tious and contagious cases, more exposed to diffuse a pestilence all over the island, if there had been any such a thing existing as contagion ; yet we find, that not one single subsequent case can any way be traced to those of the Van Nests. Was that a contagion imported from distant regions ? As for Mrs. Brower, the nurse of the two unfortunate young gentlemen, who was reported as sick with yellow fever on the 17th of September, I should not have any objection, for the sake of argument, to trace her case to these *infecting* subjects, for, it will be explained hereafter. Yet, from the same motive, I cannot, with consistency, admit it as such. (Vide No. 25.)

There have been other equally infectious houses or cases, and as much so, as if the whole of the inhabitants of the Lazaretto had been let loose in our city : Mrs. Kavanaugh's house, (No. 1) where, after her death, four successive cases of malignant fever took place, has been an uncommonly frequented resort of friends and visitors, and where, according to the customs of the Irish nation, and to the rites of the Roman Catholic profession, there has been a repetition of night wakes, administrations of the sacraments, and crowded meetings of friends and religious people. The same exposure was shortly after renewed at John Davis's residence, 72, Front-Street, and especially at the young M'Kay's, 21, Old Slip. (No. 8.) This family had an extensive circle of customers and friends. My private practice has offered other remarkable preservations ; that of a sister who nursed, and slept in the same bed with a victim of yellow fever, Miss Brown, in the First Avenue ; that of the family of Mr. Caleb Sutton, a carman, Corlear's Hook, composed of five persons, in a house tenanted by the same number ; that of Sagerson, (No. 11.) with his wife and children, in a house where many families

lived, and where there was a retail grocery and liquor shop below. We must, then, forbear to look for other instances, during the season, to prove the incommunicability of the malignant fever; wishing only to mention, that the daily and authentic reports of the Board of Health did not acknowledge a single case of contagious yellow fever. As to the case of Mrs. Russel, in Church-Street, which was stated by Dr. Jacob Dyckman, and was lately exhibited as derived from contagion, it must remain included with that of Mrs. Brower, as we will explain hereafter; both being cases of immersion in infected atmosphere, which absolutely differs from contagion.

We come to some more important objections. The first is the explanation offered, of the rare, and never truly exemplified contagion, among us, of a disease supposed to be imported from tropical regions, namely: "that the yellow fever proves rarely contagious in pure air, &c." This *relieving* clause, if true, should then have been conscientiously used to diminish as much as possible of the expenses and alarm of our fellow-citizens, and to aid them in comparing and judging, by defining what is pure or impure air. Commerce would not, then, be interrupted by quarantine laws, and no restrictions would be necessary in towns, streets, stores, and places where pure air predominates; and it would nearly reduce the question between contagionists and non-contagionists, to what the latter perfectly agree—1stly, to correct nuisances; 2dly, to avoid approaching infected ships. Instead of such an explanation, we find, that our alarmists inconsistently trace the disease to foreign origin, although imported through the pure air of the seas, and will have it communicable even by inanimate substances, goods, and clothes, to which they suppose it adheres; this they do rather than ac-

knowledge its possible formation, amongst us, from putrid exhalations. We must, therefore, mistrust the useless *modification*, as Dr. Chisholm consistently rejected it, from the American professor who first proposed it. The fact is, that the proposition is *false* : it can do no good practically, and may serve only the purpose of accommodating an erroneous datum against experimental inferences of non-contagion. I say *false*, because the ambient air of a subject diseased with yellow fever cannot be pure, especially when confined in a room or in a bed. Each instant of the existence of the patient contaminates the air he breathes, and every thing he touches. If there is no pure air about him, or if, in other words, he is essentially a mass of contagion, who could hope to approach or to touch him through the medium of pure air? How could it be possible to protect a by-stander, or a person in contact, against the power of contagion? The word *contagion* must, therefore, be totally erased. Another proof of the necessity of its rejection I derive from the variety of symptoms, and diagnoses, which really constitute this Protean disease. *Contagious* matter is that, which has the power or attribute of creating one and the same sort of complaint, from the fomes of which it has been derived. Reasoning by analogy from other contagious complaints, it must constitute three necessary conditions; one is, to indicate in what vehicle it can be contained; the second, in what mode it is to be received, and the last, is to produce, in a certain defined space of time, a disease perfectly similar to, or of the same defined form and symptoms, as that from which it originated; these required characteristics are perfectly demonstrable in *syphilis*, in the *small-pox*, *rubeola* or *measles*, in *scarlatina*, in *herpes*, or *itch*, and, like cutaneous eruptions, in the *cow-pox*, in hydrophobic ca-

nine madness, &c. each one according to its nature. The evolutions of stages or symptoms have been so far investigated by experience as to afford mankind effectual means of prevention, except when the columns of air, now and then, transport the contagious elements, and even then, an ultimate removal of the danger can be devised and obtained. Now, to any reflecting man, we will prove that neither of the three conditions required to constitute a contagious yellow fever, have yet been realized. Its poison or venom has not been found in the blood, in the lymph, in the bile, in the excrements, nor in the matter of black-vomit. Records of repeated experiments are well known to physicians, and need not be related in this abridged exposition. Nor did the late Professor Valli* consistently prove that it existed in the cutaneous perspirable matter ; *a minori ad majus non valet consequentia.*

The partisans of contagion, also, place it in so many material objects of transportation, such as wood, sails, rigging, produce of any kind, dry goods and clothing, that, from human contagion, they transform it into something more probably like metallic or chemical fumes, say the oxygenated azotic gas, capable of operating great changes on the human body. This might do, indeed, if, instead of transporting it free, it was confined in a bottle ! But, we come to the last attribute of contagion, that of generating a disease *sui generis*, and always marked by the same characteristic symptoms :

* The renowned Dr. Valli hoped to prove that contagion existed in the perspirable matter exhaled through the skin, and therefore resolved to put the dirty shirt of a recently expired sailor, on his own body. In performing this experiment, in a state of already deranged mind, the Italian professor had taken it for granted, that he could not receive the yellow fever in the impure air of the city of Havana, and that he surely would take it, in his own way, and could afterwards cure himself; in this last result he proved as unfortunate as in the first !

That this is not the case, we have evidently ascertained.

Mr. Pinckard, of England, who had great experience of the symptoms of this fever in the West Indies, has observed, that "yellow fever exhibited such perpetual instability, and varied so incessantly in its character, that he could not discover any one symptom to be decidedly diagnostic, and hence he was led into an opinion that the yellow fever, so called, is not a distinct or specific disease, but merely an aggravated degree of common remittent or bilious fever of hot climates rendered irregular in form and augmented in malignancy, from appearing in subjects unaccustomed to the climate."* Dr. Rush, after many years of observation, had been obliged to confess that every succeeding prevalence exhibited peculiar differences in the character of that disease, and that he was obliged to modify or alter a former approved mode of treatment.

There is no European nor American observer on this subject, but his correct statement of this disease, in a different time or on a different theatre, must differ from that of others. Among an immense collection of testimony, we find that yellow fever has been a *sthenic* and an *asthenic* disease: it had much of the first character in Philadelphia in '93 and '97: Two professional men, yet living, were bled, one 21, the other 17 times. This inflammatory disposition of the subjects was much abated in '98 and '99, when patients could be cured without bleeding; but the *sthenic* character reappeared in 1803. It is also remarkable that the yellow fever of

* Father Labat, a man of great genius, a famous traveller in and through the tropical regions of America, one hundred years ago made the same observation. "This fever," said he, "varies in its symptoms, as much as the constitutions of the persons who take it." He had himself suffered several attacks of it.

Cadiz, in 1801, which was of the American stamp and breed, according to the contagionists of that country, was very different in nature and type, for, it was universally asthenic, and became more surely fatal, by venesection. From these primordial influencing changes, it may easily be inferred how various the symptoms and determinations or diagnoses must afterwards be. The tumult of the attack is sometimes in the arterial system or in the brain; further, it is in the alimentary canal, and in another in the nervous system, for I have seen yellow fever ushered in by convulsions, by epilepsy, and by St. Vitus' dance. But still, more strange to say, the disease can evolve itself similarly to fever and ague or intermittent fever, to remitting bilious fever, and to inflammatory continued fever: again, it sometimes follows the Hippocratic periods in relation to crisis, and sometimes runs along three or even five days, without the least perception of pain or uneasiness by the patient, who has not been obliged to interrupt his occupations, and who rapidly arrives at his death without any warning. Black vomit, and yellowness of the skin, are, by no means, such predominating symptoms, as to be required to constitute yellow fever. Vomiting of blood or of dark bile, or cholera morbus, are frequent substitutes to *vomito Pietro*; petechiæ, gangrenous, blue, purple and black spots, have often replaced the yellow colour. This is a feeble, but faithful picture of the contrasting characters and variable signs of yellow fever, which are so multiplied and so changeable, that they cannot be said to be the result of the same specific contagion.

SECTION II.

MALIGNANT FEVERS, AND YELLOW FEVER, ARE PRODUCED BY IMPURE AND DELETERIOUS EXHALATIONS FROM PUTRID SUBSTANCES ; OR BY ANY OTHER MIASMATIC CAUSE, VITIATING THE ATMOSPHERE.

THREE active causes, principally, which are daily falling under the observation of our senses, may vitiate the atmosphere in which we breathe, or that part of it, at least, in which we usually remain, or where we keep our ordinary habitations. These causes are, *heat* and *moisture*, exciting a putrid fermentation in the soil, or in accumulated *putrescible materials* under or about us. To these well known agencies, in the age in which we live, we generally resort to trace various diseases incident to human nature, fever and agues, or intermittent fevers, also all sorts of typhus, and several other kinds of pernicious fevers, &c. and it is rather a departure from the dictates of reason, that we should discard the application to this disease, of the laws of nature in other diseases, merely alleging as a reason, that being more fatal, it should be accounted for by more incomprehensible and undefined causes, such as, that of foreign contagion ; but, for the sake of argument, let that hypothesis be admitted, and let us reflect a moment ; that belief will throw its supporters into the dilemma, of concluding that the poison of the plague, or the yellow fever, is imperishable, or that in certain circumstances it can be regenerated. Now, the first position is untenable, because, long periods of time have elapsed, without plague, or yellow fever, in the Mediterranean countries or in the American con-

tinent and islands. They must then have been regenerated under some circumstances of putrid fermentation; the contagionists, therefore, implicitly admit the same laws of nature, which they explicitly disbelieve and oppose. Now, *ab actu valet consequentia*; why should not the yellow fever be engendered here, under similar circumstances, as it has been in Bulam, in Grenada, in Vera-Cruz, and in New-Orleans? We see no difference in consequences, but that of a more intensely malignant disease, or of more frequent returns of it, in one place, than in another. We find, in fact, that *heat*, the first agent of pestilence and yellow fever, has surpassed, this year, in the City of New-York, that of many former summers, in intensity and continuance. This cause alone, however, could not have been very prejudicial to the public health. The bills of mortality considerably increased during the two first weeks of August, owing to the bowel complaints of children, and dysentery among adults, and a few sudden deaths or undefined complaints; but the number of deaths decreased during the latter part of the same month. Our prolonged state of health was a great subject of congratulation, while our neighbours of Philadelphia, of New-Haven and of Boston, seemed threatened with a visitation, which during 14 years had never appeared in the northern ports or inland towns of those states. The same had already left harbingers of future ravages in the ill-fated city of Baltimore.

We can account for the blessing of our long continued health, by two circumstances; viz. the numerous improvements which, of late years, have been introduced into our city; such as the replacing of a vast number of old and decayed frame buildings by brick stores and dwelling houses; the lengthening of West and South Streets; the destruction of many old, extensive

wharves, the demolition of entire blocks, and the widening of narrow streets for the free admission of a necessary ventilation. The second cause of the continuation of public health, is the long and remarkable drought in our city and island during the whole summer; this drought destroyed the pastures, and greatly diminished our usual share of culinary and ornamental vegetation. Large and populous cities are, however, healthier with excessive and dry heat: had we been often refreshed by rains and showers, a calamitously sickly time might with probability have been expected in New-York, on account of the many wharves and docks which ought to be corrected, of the parcels of lots made or raised with putrescible materials under a number of old buildings, which remain to be improved, and the narrow streets or lanes which require ventilation.

Old Slip, as it is called, does not appear to be as bad as many others in the upper range on the East River, but its situation is more southerly, and it is closed against N. and N. W. winds by the higher adjacent streets. It is situated at the lower end of a space, anciently called *Rotten-Row*, where long and contested claims between the Corporation and the estates of some private individuals, prevented the ordinary improvements, which might have purified or renewed the ground. This place has always been the common receptacle of the whole filth of the city. The two narrow lanes, *Gouverneur's* and *Jones's*, afford an exemplification of the unhealthy disposition of the streets. It may be safely presumed, that the soil in this vicinity is very impure, or composed of perishing and fermenting materials. The slip is shallow, and its sides, like many others, are composed of piles of wood, thick, uncovered, and now rotten, wormeaten, and coated with black mud; and it is throughout the receptacle of ani-

mal exuvizæ and decayed matter, emitting in warm weather an offensive smell, and, no doubt, also, deleterious miasmata. A sewer empties into this slip, which originates from a private house or houses. How much filth this may contain and discharge, and in what state it may be in its course from Sloat Lane, I have not been able to ascertain, but be it more or less, it is a nuisance near to the surface of the ground. The middle square, or block of houses on the west side of the slip, between Front and Water Streets, on a depth of upwards of 200 feet, and a breadth of 160 feet, is mostly composed of old houses, and many are of wood and decayed; those on the front have no yards, and no ventilation, except from the slip; in fine, in the preceding years of 1793 and 1803, the yellow fever broke out in that neighbourhood, and was remarkably severe in it. It will be seen, by the diagram, and by the annexed statement of cases, which occurred in the vicinity of Old Slip, that, out of 57, (the total of them) the enormous proportion of 34 or 35 originated from that single block, which, if it had not been absolutely cleared of its inhabitants at an early period of the month of September, would have become a shocking theatre of pestilential devastation. Ten persons, out of the number of 33 sent to Fort Richmond, the greater part from that block, shortly after sickened with the malignant fever, and three of them died in the Marine Hospital. But, before we proceed any farther in the enumeration of facts, and of their just application to the true cause of this calamity, we should not listen to the cavilling remarks or ill-judged pretexts of isolated causes of contagion as arguments alleged *a posteriori* to overthrow fundamental truths; let us, however, examine an objection which we think requires a clear

explanation. It may be said, for instance, that if such an operation of the causes we have pointed out, (*heat* and *moisture*, on a great quantity of fermentable materials,) had existed in the slip and vicinity during nearly three months of an excessively warm summer, we would have often, and long before, during the season, heard some proofs of its effects, and witnessed the presence of a pernicious disease in that neighbourhood; but this not having been the case, some other cause, such as that of a *contagious* introduced poison, must have concurred to produce it, at the late period of its formation. We answer, that in the operation of the laws of nature, which requires the coincidence of several agents and causes, we must attend particularly to the various impulsions and interruptions which they may receive from casual circumstances, retarding one single combination, or the ultimate effect they are to produce. A ship, for instance, loaded with provisions and cotton, may be said to contain the most dangerous elements for the creation of pestilential disease; yet, she crosses the ocean without sickness, having always been dry and tight. On the other hand, suppose she has weathered a terrible storm, immersed her provisions and cargo in salt water, and has afterwards been exposed to a continuation of hot weather, she, surely, will not escape pestilence. There are, also, various incidental causes destroying a *fomes* of infection, which may be better explained in, and applied to, the late and partial occurrence of malignant fever in New-York. The following concise exposition of the laws and nature of deleterious and pestilential miasmata, may, we hope, make our subject better understood, and set the objection at rest.

1st. Heat at 95° and upwards, which is rarely expe-

rienced, is, in various ways, destructive of human life, and rapidly devours or destroys those putrescible materials which may engender pestilence; from 85° to 90° , if aided by moisture, it becomes a powerful agent of putrid fermentation, yet it then rapidly absorbs impure miasmata, and dilutes them to a harmless proportion. It is observed in the Levant, that a plague prevailing to a great height, is always checked by excessively warm weather. With little or no moisture, great heats are not more operative than they would be at a lesser degree, because caloric being extremely diffusible, is longer retained by humid substances than by dry bodies. The city of New-York, it is well known, has been refreshed by very few showers or rains during the month of August; and the last took place on the 28th.

2dly. Moisture continued without heat, and at a temperature not above 66° or 70° , is productive of marsh miasmata, and of fever and agues; but with occasional stronger heats, it aggravates fevers of the intermittent and remittent type and form, also exathematous, and, somewhat scorbutic, fevers, which are well known to have been endemic and frequently very pestilential in *Zealand*, one of the United Provinces.

3dly. Pernicious gases, arising from putrid fermentation, can, by winds, be dispersed before they adulterate the lower orbit of the atmosphere, in which men breathe. They may also be carried to distant spots, and fatally affect unaware and unguarded victims. Hence, the repeated instances of people receiving the prevailing disorder, at a distance from the infected spot, and even in ventilated or healthy situations. This may account for the yellow fever in 1798, in the most elevated part of Portsmouth, called Churchill; and in the city of Medina de Celi, on a high

site, on the declivity of a mountain, in Andalusia, below which there are large swamps and ponds.

4thly. Poisonous vapours, from putrid fermentation, are well known, by chemists, to be specifically heavier than atmospheric air; not so much so, however, as fixed air, or carbonic acid gas, another deadly aërial poison; but they can scarcely arise above the ordinary height of human habitations. In Turkey and Egypt, the inhabitants instinctively run from the plague to the tops of their houses, where they are sure to enjoy a pure air.

5thly. Cold weather suspends the process of putrid fermentation, until it can be renewed by a succeeding warm temperature. But that of the freezing point destroys it absolutely, and it cannot be renewed, but by the long operation of heat and moisture at the future annual period of their return; yet in places of the same description, many years have sometimes elapsed before the putrid fermentation was renewed, although, once during three successive summers, it broke out on the river's side, at Philadelphia; those were 1797, '98, and '99.

6thly. Infecting marsh miasmata have a great attraction for moisture, and pure water will readily absorb them. If, during warm weather, and in an impure atmosphere, after having refreshed yourself with a draught of cold water from the well, you let the pitcher stand, for half an hour, exposed to the external air, it will contract an unpleasant taste and a rather fetid smell, besides growing warm. Fresh water, taken at night by your bed-side, will be found very unpleasant to your taste in the morning. This great attraction of moisture for impure effluvia is illustrated by the singular preservation of the water carriers in Constantinople, who are said never to take the plague. It,

also, proves, that our respiratory organs, from the mouth to the inmost bronchiæ, must be very attractive and retentive surfaces for any floating aërial poison, especially by exposure to the damp night air, wholly saturated with infected moisture.

7thly. Infectious vapours or gases are always invisible, except when they are saturated with electrical fluid, or with phosphorus; they then become visible at night, or in the dark, as is the lambent light on high masts and rigging, on board ships, &c. called the *Jack o'lantern*, or as the churchyard lights, so often observed and noticed as earthly meteors. In the first of these cases their specific gravity becomes less than that of the atmospheric air; they rise, and they are not dangerous; in the other, they form something like a fluid crystal in the water, or in putrefied animal and vegetable substances, especially in fish bones and rotten wood, and the same combination gives probably the sparkling to those insects called fire flies, *blatta*, *lampyrus noctiluca*. Of these three compounds, the results from putrid fermentation, we could immediately present a sufficient analysis, were it not taking too much space and time from our proposed subject.

We leave to the reader, the offered opportunity of comparing the laws and principles, herein stated, of deleterious and pestilential miasmata and their inferences, in application, against the last objection, to any home-engendered form of malignant or yellow fevers.

SECTION III.

EXPOSITION OF THE CASES OF MALIGNANT OR YELLOW FEVER, AS THEY HAVE OCCURRED IN THAT PART OF THE CITY OF NEW-YORK CALLED *Old Slip*, AND VICINITY, FROM THE 30TH OF AUGUST, 1819, TO THE END OF THE EPIDEMICAL SEASON.

THE historical enumeration which we undertake, imposes on us certain rules, which it is proper to mention: The order of the successive dates of sickening, has appeared preferable to the time at which they were known or reported, for there has been sometimes but one report of sickness and death; we have excluded, also, as the Board of Health have done, instances of disease not exactly defined by competent authority, as malignant or yellow fever. Cases originating on board of vessels, or, as has been supposed, on the quarantine ground, have been omitted as irrelevant in the examination of the question of domestic or foreign origin in the city. Many persons who had removed from the proscribed limits or vicinity, and who had carried with them the seeds of the disease, and perhaps died at a distance, could not with authenticity be added to our catalogue. We will, therefore, take notice only of those who remained under the jurisdiction of our Board of Health. Any circumstance which we have thought might lead to correct inference on the origin of the disease, has been the principal object of our inquiries, and of this exposition.

No. 1. in the map.—Mrs. KAVANAUGH* is the first in

* Although the reports of the physicians who attended this woman are somewhat different, they are not contradictory to her malignant

view,—No. 23, west of Old Slip, where she kept a retail grocery;—did not take in washing;—did not keep a sailor's boarding-house, as has been represented;—had only two small rooms, the one where she sold her things, the other where she slept;—had been a widow two or three years; was a delicate weakly woman;—her husband had left her a little property, which, with her grocery, afforded her a living;—was attended by Drs. Morton and Bliss. The Rev. T. W. French, a Catholic priest, administered to her the sacred rites on the evening of the 27th of August; after which she remained in a kind of agony, and died on the 29th. There was no yard back of her house, which appears very low and decayed.

No. 2.—Mr. BROWN resided at No. 68 Front Street;—died on the 2d of September, before any alarm had taken place; yet it has come out, that he had a severe *bilious fever*. On this circumstance, and with that of an intelligent observer and neighbour, we hesitate not to acknowledge it as one of yellow fever. He was the father of Sarah Brown, on whose disease and ultimate death by yellow fever, we will hereafter give some satisfactory testimony.

No. 3.—MARGARET BRADY lived at 23, Old Slip, under the same roof with Mrs. Kavanaugh, but in a different apartment;—she was reported on the 2d of September, to the Board of Health, and, by their direction, sent to the quarantine, where she died on the 4th. —Was a decided case, attended with black vomit.

or yellow disease, which is frequently marked with mildness of symptoms, or with cholera morbus; and so has been, with the most deceiving appearance, Sarah Brown, hereafter mentioned. The Rev. Mr. French has informed me that she had very *red eyes*. Two circumstances confirm me in the belief that her case was yellow fever: Dr. Lord, who saw her after death, had that opinion: four or five cases, publicly known, have also taken place in the same dwelling.

No. 4.—JOHN DAVIS. This is the fourth fatal case of a lurking disorder, before any official communication was given to, or promulgated by, the Board of Health. He lived at 72 Front Street, and in a spot where the mortality has been proportionably the greatest. He had complained many days;—took to his bed on the 3d, and died on the 5th of September. It was when nearly expiring, that a neighbour reported him to the Board. Dr. Hicks, one of the assistants, who saw him a corpse, pronounced him a case of yellow fever, as bad as he had seen in 1798.

Nos. 5 and 6.—JOHN & GEORGE VAN NEST. These much lamented youths are here coupled together, as they were in life and death. Both were engaged in the same store, (No. 114 Pearl Street,) and dwelt at Mr. Abraham Van Nest's, in the neighbourhood; (William Street, No. 13,) that gentleman was the father of George the youngest of the two, and the uncle of John. He and his lady were absent, when the young gentlemen successively took sick, the one on the 30th, the other on the 31st of August. They were, notwithstanding, well taken care of by nurses and by the family physician, until Mr. Abraham Van Nest, who had been sent for, reached his place of abode, which soon became a place of mourning. I was sent for, to consult with Dr. Th. Boyd, and clearly perceived, in these two cases, the harbingers of, perhaps, a great calamity in this city. Not knowing, however, that there had been victims of this malignant fever previously, and indulging some hope that they might be sporadic or accidental, I delayed discharging the duty imposed by law, until next morning; but every hour afterwards added to my conviction. John died at 3 o'clock next Sunday morning, (September 5th,) and George, though still living, was fast approaching

to a hopeless period of agony. At 11 o'clock, the resident physician joined us for the examination of the cases, concerning the nature of which he was promptly satisfied. The scene was closed on the Monday morning following, with an awful prospect before us. Had this complaint been contagious, in a large house and respectable family, and in a thickly inhabited neighbourhood, where there has been, on that distressing occasion, an immense concourse of visitors, friends, and acquaintances,* the city of New-York could not have escaped a universal pestilence. In the last communication of their death to the Board of Health, the attending and consulting physicians greatly indulged the idea of some ill exposure having befallen the two young men, but they did not disguise their opinions of some local danger in the store, or in the vicinity of Old Slip.

No. 7.—Corporal EVANS resided, when in town, where Mr. Brown did, at the house No. 68, Front Street;—he was taken sick at Governor's Island, where he was stationed;—was attended by Dr. Swift, who communicated to the Board of Health, that he had died with black vomit, and all the symptoms of yellow fever.

* I take this opportunity of offering a few words of apology, to some medical friends who have blamed the physicians of the Van Nests, for not literally specifying that their disease was *yellow fever*, although they described its prominent characters as appertaining to that disease.

After twenty-seven years of experience on the subject of the bilious malignant remittent, which has, to this day, so often baffled the quarantine laws, predicated on the hypothesis of human contagion, I have always deprecated, and will as long as I live, any word or name of it, which may favour or prolong the belief of importation and propagation by human contagion.

No. 8.—GEORGE M'KAY resided with his mother, at No. 21, Old Slip, adjoining Mrs. Kavanaugh's; was reported on the 6th of September, by Dr. Lyman Spalding. This, like the neighbouring houses, has no yard, nor ventilation throughout.

No. 9.—JOHN OLDERLOYD was reported on the 8th of September, from 147 Water Street; but, being a shoemaker, he kept his shop at 23 Old Slip, adjoining Mrs. Kavanaugh's;—he was sent to quarantine, where he died. At this period of time, and within two or three days from the first intimation of the appearance of malignant fever, we already count nine victims, and no case of recovery, which result unquestionably proves, that, without the promptness of execution in the measures of the Board of Health, which we will hereafter indicate, the mortality would have been truly calamitous.

No. 10.—WILLIAM OTTERBURN was reported as a case of the same fever, and recovered;—he lodged at the corner of Old Slip.

No. 11.—JOHN SAGERSON at No. 36 Front Street, a cartman—somewhat intemperate;—reported by Dr. Hosack, on the 9th of September;—lived in a decayed house with an unclean yard;—died on the 11th.

No. 12.—ANN PERRY lived in the cellar of the house No. 36 Front Street;—reported on the 9th of September;—immediately removed to quarantine.

No. 13.—MRS. MAGINNIS resided at No. 90 Front Street;—reported by Dr. M'Neven, on the 9th, and died on the 13th of September.

No. 14.—MISS MAGINNIS, her daughter;—same disease;—she recovered.

No. 15.—CATHARINE MEGARY, fourth case, in the house of Mrs. Kavanaugh, No. 23 Old Slip;—sent to the hospital at Fort Stevens;—she recovered.

No. 16.—GEORGE HORNE, from 64 Water Street;—reported on the 13th of September, and attended by Dr. Hosack;—died September 17th.

No. 17.—ROBERT RAMEY, reported on the 15th of September, from 23 Old Slip;—sent to quarantine;—died 17th of the same month.

No. 18.—ROBERT M'JEMPSEY was a clerk in the store No. 100 Pearl Street, where he slept;—boarded at the corner of Broad and Garden Streets, where he remained during his illness;—reported and attended by Dr. G. Cooper. On the 15th of September, he recovered.

No. 19. GILBERT ASPINWALL, a merchant, whose store (No. 98 Pearl Street,) was exactly in the rear of the family No. 16 Water Street, above mentioned. His summer residence was in Long Island, and there he was taken ill on the 14th of September, the day he had left the city;—he died on the 18th.

No. 20.—EDWARD JOHNSON was a clerk to the above gentleman; he lodged at the corner of Whitehall and Pearl Streets; he was taken ill at the same time as his employer;—reported by Dr. Barrow, and died.

No. 21.—SARAH BROWN was the daughter of Mr. Brown, mentioned as No. 2, of 68 Front Street;—was reported on September 16th by Dr. Francis, and sent to the hospital at Fort Stevens, from whence she was dismissed on the same day, through the error of some officer, and she retired to a house in the First Avenue, nearly two miles from the city. There I visited her with her attending physician. Her case was very disguised, but malignant;—she died on the 22d of September, with the black vomit.

No. 22.—MELANCTHON SWARTWOUT was a clerk in the store No. 62 Front Street, and remained, during

his illness, at the house of his father, General I. Swartwout;—was attended by Dr. Mott, and recovered.

No. 23.—JAMES BLOODGOOD was reported on the 17th of September, from some distance in Broadway, but had lived at No. 61 Water Street.—Died on the 19th of September.

No. 24.—DAVID ARCHIBALD was an apprentice to a merchant tailor, at a distance from Old Slip, where he had frequently been on business;—reported on the 17th of September. He was sent to Fort Stevens' hospital, where he died on the 20th of September.

No. 25.—MRS. BROWER was reported on the 17th of September, by Dr. Cock, under whose care she remained, and recovered: she had been the nurse of John and George Van Nest; after the death of whom, (6th of September,) she returned to the place where she sometimes resided and often visited, a Mr. Walker's, a relation, No. 55 Water Street. This family, five or six in number, removed to Shrewsbury on the 15th or 16th of the same month, where they all sickened with the fever, and lost one child. Mrs. Brower had just returned to her own dwelling in Anthony Street, No. 15, when she was taken sick, and was reported.

No. 26.—JOHN D. WEEKS resided at No. 40 Water Street;—was reported on the 17th of September; he recovered.

No. 27.—MRS. SMITH removed from Old Slip, to No. 144 Broadway, where she was shortly after taken ill;—reported on the 18th, and died on the 22d of September;—reported by Dr. Anderson.

No. 28.—MRS. MORRIS resided at No. 101 Water Street;—her death was reported on the 18th of September.

No. 29.—ELEANOR CROSBY was sent from No. 23 Old Slip, (Mrs Kavanaugh's) to the hospital at Fort Stevens, on the 15th of September, where she recovered.

No. 30.—FRANCIS MEGARY was sent from No. 68 Front Street, (the same house in which Mr. Brown, Mr. Evans, and Miss Brown resided,) to Fort Stevens, on the 17th, and died on the 23d of September.

No. 31.—LUCY M'CAULEY was sent from No. 70 Front Street, on the 19th of September, to the hospital at Fort Stevens, where she recovered.

No. 32.—THOMAS HARVEY was sent to the hospital at Fort Stevens, from No. 65 Water Street, on the 20th of September, where he recovered.

No. 33.—ANN M'CAULEY was sent to the hospital at Fort Stevens, from No. 70 Front Street, on the 20th of September, where she recovered.

No. 34.—ANN M'MULLEN was sent to the hospital at Fort Stevens, from No. 65 Water Street, on the 20th of September, where she recovered. Her brother went with her.

No. 35.—JOHN M'MULLEN was sent to the hospital at Fort Stevens, from No. 65 Water Street, on the 20th of September. He had accompanied his father, Dennis M'Mullen, to the hospital, on the 16th inst. and after his death, the son returned to No. 65 Water Street, where he found his sister Ann sick, and went to the Board of Health to procure a conveyance for her, and accompanied her also; when he was taken sick, and there died on the 23d of September.

No. 36.—THOMAS FREEMAN: This man was a cooper;—was reported on the 25th of September, at No. 22 Fletcher Street; he had worked at No. 70 Front Street; and was sent to Fort Stevens, where he recovered.

No. 37.—BENJAMIN COUENHOVEN was reported on the 20th of September, at No. 45 Grand Street; he was a cartman;—was employed between Old and Coenties Slips; had been very intemperate for several

years. He recovered from this illness, but died of some other disease, on the 11th of October.

No. 38.—GAUL BOGGS resided in the third story of the house No. 19 Old Slip, the corner of Water Street; he had been removed by the public authorities, and afterwards returned. No person except his family, knew any thing of him. He had no physician, and the first information received, was that of his death.

No. 39.—DENNIS M'MULLEN reported on the 16th of September, and on the same day was sent to the hospital at Fort Stevens, where he died on the 17th.

No. 40.—WALTER GLADSON resided at No. 65 Water Street, was reported on the 22d of September,—sent to the quarantine hospital, and died on the 24th.

No. 41.—WILLIAM SEXTON reported on the 22d of September, at No. 2 De Peyster Street, where he had recently removed from Old Slip;—died on the 27th of September; reported by Dr. Cock.

No. 42.—MR. PLATT, residing at No. 22 White Street, was reported on the 22d of September; after a few days he recovered.

No. 43.—MISS OSBORN, who lived in the family of James Denham, No. 66 Front Street; removed to Brunswick;—was taken sick with malignant fever, on the first day after their removal, and died on the third, (the 14th of September.)

No. 44.—DENHAM, son of James Denham, was also taken sick of malignant fever.

No. 45.—MRS. CONLIN died of malignant fever, at No. 53 Front Street; she was, on the 18th, before the Board of Health, where she received assistance to enable her to remove to Newburgh, where she had some friends; on her return home, she was taken sick, and died on the third day after.

No. 46.—WILLIAM BRITTAIN was reported on the

23d of September, at No. 31 Greenwich Street; he was a clerk in the store No. 27 Old Slip, and had been there a few days before. He recovered,—was reported by Dr. Kissam.

No. 47.—WILLIAM DOUGLASS, a coloured man, reported on the 23d of September, in Lombardy Street; he was a labourer, and had worked at Old Slip.

No. 48.—EDWARD DONAGHAN was reported at No. 51 Augustus Street, on the 23d, and died on the 24th of September. This man was a cooper, and had worked in Mesier's Alley, in the rear of the house No. 58 Front Street.

No. 49.—CALEB SUTTON, who resided near Grand Street market, reported on the 24th of September. He had been assisting a family who were removing from Old Slip.

No. 50.—MARY BODDY had nursed Mrs. Graham during her confinement, at No. 86 Pearl Street;—returned to her residence, No. 219 Church Street, and on the third day (25th of September), was reported by Dr. Dyckman. She recovered.

No. 51.—MRS. GRAHAM, No. 86 Pearl Street, was reported by Dr. Bliss on the 26th of September, and died on the 2d of October.

No. 52.—CHARLES GRAHAM, son of Mrs. Graham, No. 86 Pearl Street; reported by Dr. Bliss, on the 26th of September. He recovered.

No. 53.—MRS. FARREN resided at No. 68 Front Street; was removed by the public authorities, to Fort Richmond;—was there but a few days,—was taken sick there, and died on the 21st of September.

No. 54.—GEORGE BROWN resided at No. 68 Front Street;—was removed by the public authorities, to Fort Richmond, and after being there a few days, was taken sick, and died on the 22d of September.

No. 55.—FRANCIS MEGARY resided at No. 68 Front Street;—was reported on the 17th of September;—sent to Fort Stevens on the same day, and died there on the 23d.

No. 56.—MRS. WRIGHT lived with her husband, who was ship-keeper, on board the ship Frances, which lay at Gouverneur's Wharf;—had no physician during her illness, and was not reported (by Dr. Jacques) till after her death, which took place on the 1st of October.

No. 57.—WILLIAM BOERUM resided at No. 148 Water Street;—was reported by Dr. Onderdonk on the 1st, and died on the 2d of October.

No. 58. MRS. VANDERBILT resided at No. 59 Stone Street; was reported by Dr. Belden on the 3d, and died on the 5th of October.

No. 59.—JAMES RAY resided at No. 76 Wall Street;—was reported on the 3d of October.

No. 60.—WILLIAM LYNCH resided at No. 76 Wall Street;—was an apprentice to a barber;—reported on the 3d of October, and died on the 5th.

No. 61.—EDWARD CAHOON resided at No. 79 Wall Street; was reported on the 3d of October, and died at quarantine, on the 6th.

No. 62.—JANE WELSH resided at No. 128 Pearl Street;—was reported on the 6th of October, and died on the 10th.

No. 63.—JOHN WALLIS worked as a mason at a building in Pine Street, between William and Nassau Streets;—was reported on the 7th of October, at No. 2 Beach Street.

No. 64.—Misses AYMARS were reported on the 12th of October, at No. 46 South Street; and they recovered.

No. 65.—ANN STEVENSON, reported on the 13th of October, at No. 39 Water Street. This person lived in the capacity of a servant to a family who had re-

turned to the above house three days before.—She died on the 16th.

No. 66.—JAMES FERRIS kept a sailor's boarding house at No. 76 Front Street, the corner of Old Slip ; --was removed by the public authorities to Fort Richmond, where he remained with his family for several days, when he was taken ill, and died on the 26th of September.

N. B. One hundred and fifty persons were removed by the Mayor, in pursuance of the ordinance of the Corporation, from different parts of the infected district, and sent to Fort Richmond on Staten Island ; and, as might be expected, the disease was carried down with them ; ten cases however only occurred—they were sent to the Marine Hospital ; three proved mortal, viz.—Nos. 53—54—and 66.

SECTION IV.

OF THE MEASURES ADOPTED BY THE BOARD OF HEALTH, TO ARREST THE PROGRESS OF THE MALIGNANT YEL- LOW FEVER.

To guard against all possible introductions of *malignant, yellow, pestilential, or infectious fever*, is the defined intention of our statutes; and great powers are committed to the Board of Health, concurrently, also, to the Commissioners of the Health Office, for the discharge of that important trust;—next is that of enforcing internal cleanliness, and the suppression of causes of a local nature that are productive of impure air, and as able, eventually, to generate infectious fevers. At this period of time, after a long experience of the inefficacy of our quarantine laws during warm seasons, for the prevention of repeated returns of yellow fever in the populous cities of the Union on the seaboard, it must have become a matter of doubt, for many of our observing inhabitants, whether a fever which has so frequently occurred at the end of summer, oftener and sooner on southern parts than in the northern, which has been differently propagated according to circumstances of season, and so particularly marked by its primitive formation in low, unhealthy and unclean populous districts, was not under the principal agency of domestic causes. With these advancing steps, from progressive experience towards correct inferences, which have been supported by a great number of philosophers and physicians in this Union, and which no two public scientific bodies have

ever officially contradicted, during twenty years of observation, it might have been expected that our Board of Health in 1819, would be as partially guided by the doctrine of the domestic origin of yellow fever, as ancient institutions of the kind were strenuously, and almost exclusively under the dictates of the opposite belief (that of imported contagion). But this has not been the case; they have most scrupulously obeyed the intentions of the statute. In their various communications to the public, they have abstained from matters of debate and controversies, the different views of which could not at present alleviate a threatening calamity; and equally guarding against all possible danger, have maintained a strict line of impartiality: first, in closing all the possible avenues, by land or by sea, of any importable or contagious disease: secondly, by interrupting the communication of the same, from infected persons to the healthy population: thirdly, by restraining the effects of any defined source or limits of infection; and lastly, by collecting impartial and authentic documents of the origin or formation of every case occurring during the epidemical period.

The channel of foreign communication has, in former years, established the belief that we derived our autumnal epidemics of yellow fever from the West Indies, and other tropical regions.

However justifiable the framers of our laws have been to guard against infectious diseases, which foul ships and damaged goods have so often proved to be transmissible to healthy people within the sphere of their approaches during the seasons of exhalation, it is to be regretted, in a commercial point of view, that they predicated their statutes on the doctrine of human contagion propagating those diseases; for, the same principle has immediately been assumed by foreign nations

and governments with whom we are in constant intercourse. But far from absolving our country from the stain of generating pestilential diseases, the which we wished to inculcate to all the world, every recurrence of yellow fever in the United States, has strengthened among foreign nations the belief that yellow fever was an American disease, and not only an endemic of the West Indies, but also of the United States. To these they have traced their recent instances of the same epidemic, forgetting thereby that malignant fevers, quite distinct from the plague, and of the same form as the yellow fever, have from time immemorial, and even during the flourishing ages of the Great Republics, ravaged frequently all the Mediterranean states down to the two last centuries, in the annals of which we find many calamitous occurrences of yellow fever, principally in Cadiz, in Leghorn, and other Italian ports. Furthermore, quarantine laws and restrictions have been retaliated against us, not only in the European states, but also in the West Indian commercial ports, where endemial malignant fevers devour the European and American population, and are never arrested by the beneficial temperature of our winters. If these appear to us prodigious errors and much to be lamented, let us reflect for a moment that they are the result of the doctrine of human contagion in yellow fever, and to the same we contribute ourselves in as much as we have favoured its prevailing sway.

It is remarkable, that in every preceding instance of yellow fever in this or the other parts of the United States, within a period of 27 years, the partisans of importation have never failed to designate some ship from tropical parts as the source or vehicle of contagion. That the yellow fever which has this year appeared on board of several vessels at the quarantine ground, has

not been imported from thence to the city, we can, from recapitulated events, demonstrate, and satisfactorily prove to any candid inquirer.

Of all the vessels arrived at quarantine from suspected quarters, I find but a few to which the foul aspersion may be traced: the first, is the French ship *La Florestine*, from St. Pierre la Martinique, arrived at the quarantine ground on the 24th of July; the second, the ship *Morning Star*, from New Orleans, on the 2d of August; and the third, the brig *Eliza*, captain Topper, from Charleston, on the 12th of August. Any subsequent arrivals, with or without sickness on board, we shall not take notice of, as they were reported at a later date. The *Florestine* entered the East River on the 24th of August, after performing thirty days quarantine, but she was ordered to remain in the stream; her crew had been reported to the Board of Health, as being in a most healthy condition; the other vessels were released from the Lazaretto at a period later than that at which the sickness broke out in New-York. Should the searchers after contagion still trace it to the French ship after her quarantine and repeated purifications, we must then conclude that our health laws and regulations are inefficient, or that no period of time can be assigned for the extinction of a poison transmissible through the air, as easily as the operations of thought.

But contagion has been referred by some severe explorators to Baltimore packets, which generally take their stand in Old Slip. On the 28th of August, I saw but one there; this was the schooner *Resolve*, Vatrous master; she was not yet loaded, and a week after she was obliged, agreeably to the orders of the Board of Health, to take her station in the North River, at pier No. 10, where she remained till the middle of Sep-

tember, without leaving there any trace of infection. The other vessels from Baltimore had, probably, left it when no yellow fever prevailed; as, we are authentically informed, that a few cases of yellow fever, which broke out there in the middle of July, at Smith's dock, produced no farther infection nor contagion until the latter end of August and the beginning of September, when it was officially announced. A last observation on this subject may, above all matters of scrupulous inquiry, evince the efficiency of our quarantine regulations in relation to commercial intercourse. There is but one well known spot of communication with our Lazaretto and neighbouring parts; that is Whitehall, where boats, sloops, and steam-boats are regularly, and at stated days and hours, constantly going and coming for public and private business. The neighbourhood of that place is equally populous and accommodating to travellers, with houses of resort, of lodgings and for refreshments, which are exposed to contact and communication with every infected person from quarantine. How then has it happened, (such a thing is unheard of,) that not a case of yellow fever has been imported there from the Lazaretto?

A second object to be kept in view, by the guardians of the public health, was that, as soon as the disease was recognised, the infected persons should be separated from the healthy population, and that the inhabitants themselves might be removed from whatsoever infectious spot or vicinity, observation should point out. Humanity no doubt indicated these measures, not only for the preservation of lives against presumed pestilential contagion, but also against any suspected domestic source of disease; it was, moreover, a truly analytical method, for exploring which

might be the most preponderating cause of yellow fever, the human contagion from person to person, or a vitiated atmosphere in certain defined places. Three days after the first declaration of two cases existing in the house of Mr. Abraham Van Nest, and the subsequent discovery that was made of four or five more, within the limits of blocks contiguous to Old Slip, the Board of Health boldly published the following resolutions.

“ New-York Board of Health,

Monday, 6th Sept. 1819.

“Whereas this Board has reason to believe that several deaths of malignant fever have occurred at Old Slip and its vicinity—Therefore,

“*Resolved*, That the inhabitants of that part of the city situate within the following boundaries, to wit, beginning at the foot of pier No. 8, East River, thence running on the easterly side of the same pier and the adjoining slip to the corner of Pearl Street, thence up Pearl Street to the west side of Wall Street, thence down Wall Street to the East River, be and are hereby recommended to remove, and that all vessels be removed from within the bounds aforesaid.

“*Resolved*, That it be and hereby is earnestly recommended to the inhabitants of the said city, as well within the boundaries aforesaid as elsewhere, to purify their yards, gutters, and privies, by a free use of quick or unslacked lime.

“*Resolved*, That the Assistants of the Board of Health, together with the City Inspector and his Assistants, be, and hereby are required to examine every house and lot within the limits described in the first resolution; and that wherever it may be found necessary, they cause any house, apartment, cellar, or yard, to be cleansed, and that they cause all privies, sinks,

gutters, or other noxious places that may be neglected by the inhabitants, and which may appear to be deleterious, to be purified by a free use of quick lime.

By order of the Board,

JACOB MORTON,

Sec'ry to the Board of Health."

Great murmurs manifested, at that time, the dissatisfaction of the public, who were not aware of the existing danger. An affecting and instructive address from the guardians of public health was shortly after submitted to their fellow-citizens, eloquently written, and satisfactory as to the existence of imminent danger to their lives. "It was in the same spot," they said, "where the fatal summer of 1798 had commenced its ravages, by a scourge which now seemed to be gradually diffusing itself. It was their duty to endeavour to extirpate it in its infancy. They were not insensible of the inconveniences public and private which might result from their recommendation. By waiting till the progress of the disorder rendered the necessity of the step obvious to all, they might have avoided some odium; but they would ill have deserved the confidence reposed in them as guardians of the lives of their fellow-citizens, had they, through dread of personal responsibility, slumbered at their post until the danger became imminent, and perhaps inevitable. Measures of precaution, when attended with present inconvenience, are always unpalatable, and they usually become more so, when most completely successful. It frequently happens that their failure is received as their best justification." With arguments so pressing, public discontent and mistrust were not removed, and twenty-four hours after, a numerous and respectable meeting citizens was convened at the Tontine Coffee-House, to inquire and ascertain, whether any, and what sufficient

reasons existed to induce the present alarm in the city respecting malignant fevers, &c. This was the point of difficulty for the guardians of our public health to be prepared against. They, no doubt, had foreseen it, but they remained unappalled in the path of their duty against a respectable portion of their fellow-citizens, who represented the whole commercial interest, and that of all moneyed men. They had temporarily assumed the task "of examining critically into the state of that part of the city, said to have malignant fever in it, and that they should report to citizens, &c." A clause was subjoined to their resolutions, happily saving or removing the danger of much future censure; it was, that "their Committee should confer in the first instance with the Board of Health." How praiseworthy to the friends of a free government like ours, that, after all, no passion or prejudice in it can supersede the proper respect to the laws of the country!

The gentlemen most active in this business, had, no doubt, in view the preservation of lives, as much as the prosperous course of mercantile and exchange business. They might have accused the Board of Health of precipitancy in their judgment of a few alleged cases of yellow fever, all of them from an obscure and unobserved class of people, except the Van Nests, whose cases, an eminent physician, it appears, had taken some trouble to represent as different from yellow fever, the contrary declaration thereof, by the resident physician notwithstanding. This opposition and other articles in the public press, diffused a temporary distrust, which had but a short duration, and was promptly replaced by an unbounded confidence in proper authority. From this moment, the Board of Health has continued to accomplish the execution of their wholesome design. The poor who

resided within the proscribed limits, to the number of about 150, were removed to Fort Richmond on Staten Island, for the ready use of which, the citizens of New-York are indebted to the governor and commissioners of fortifications. The sick, when practicable, were sent to Fort Stevens on Long Island, as liberally offered by Major Barron, Quarter Master of the United States. Every measure, besides, which experience has recommended, was employed to remove nuisances and purify those parts of the city where danger was most to be apprehended. Other subsidiary regulations were pursued by the Board of Health and by the Common Council, for emptying the cellars that were filled with water by the violent storm and unusual tides which occurred on the 21st and 22d of September; for preventing the sale of foul and infected clothing, and for various other purposes. But, one principally, we should not omit mentioning, for securing the district from depredation, which, on the name and by the authority of the Common Council, provided watchmen and a double guard employed in the safe keeping of an immense property within the proscribed limits. Public authority was pledged to afford them medical aid in case of sickness, and a liberal continuation of their pay during the time in which they might incur the common danger for the public good.

The last duty, which the guardians of the public health have discharged with the most scrupulous attention, was a critical examination, and inquiry into the nature and circumstances of the origin of each case of sickness reported to them. They were thereby enabled to decide on the propriety of removing, when practicable, persons who, in the acceptance of contagion, had become dangerous to their fellow-citizens. It was also from an early conviction that the seeds of disease were

apparently disseminated in a certain defined space of ground, that they, so timely and with such certitude, pointed out the danger to the inhabitants. It has seldom rested with one physician to determine on the nature of a case ; the resident physician has always exercised, with diligence and propriety, the right of investigating the symptoms as well as any important circumstances of the disease. Errors have seldom taken place among gentlemen of opposite theories ; if a few of them have been hastily promulgated, they were promptly corrected in the public opinion by the concurring wisdom and harmony of the members of the Board of Health and of their officers, none of whom have been known or heard to indulge any discordant opinion, surmise, and questions, distinct entirely from their important duty, and favouring the ascendancy of private feelings and prejudices. And thus the task of the Board of Health, of exploring any possible source of the disease, could not fail being attended with success. It has evidently been ascertained, that no case of yellow fever has originated in any part of the city of New-York, except in the spot or vicinity of Old Slip, of which a correct map is subjoined. Nor has any satisfactory evidence been offered of instances of sickness being traced to the agency of human contagion. I must here remark, no doubt, that some trouble has been taken to substantiate two cases of nurses, to whom the disease had been communicated by their patients. Were we not satisfied of the correct statement which we have already given at No. 25, of the case of Mrs. Brower ; and were we obliged implicitly to judge that of Sarah Russel as a real case of yellow fever, we would reply, that we have never denied that, in certain circumstances, this malignant fever might be rendered as infectious in confined places, as typhus, hospital, camp,

and jail fevers, and even as the child-bed fever has been in the lying-in hospitals of London and Paris. How much these maladies have prevailed, and how long they have been protracted in the respective abodes of impure and infectious atmosphere, every medical philosopher ought to be informed. Nurses receive and carry away all excrementitious discharges, they incessantly breathe in the confinement of a room, and at a bed-side, as much foul air as is necessary, no doubt, to excite the same febrile complaint, unless they are favoured by a healthy exposure, and by ventilation. It has been remarked, that none of the nurses at the Bellevue Hospital, in 1805, and in the Marine Hospital on Staten Island, in this and many preceding years, have ever been infected, provided the malignant air of the city or other places was avoided.

SECTION V.

CONCLUDING REMARKS ON LOCAL NUISANCES,—ON QUARANTINE LAWS, AND SHIPPING, AND ON THE BOARD OF HEALTH.

Correction of nuisances.—I HAVE advanced as an opinion, that had not the summer been a very dry season, we would have probably suffered a more general and uncontrollable epidemic. It has however been, with its excessive and continual heats, a proper test of the healthiness of the city and port of New-York, where, during summer, none of the diseases usually experienced have materially affected the public health. We may, therefore, anticipate that with farther local improvements, this great emporium of commerce may become one of the healthiest in the world.

We have seen that a very morbid influence has reigned over *Old Slip* and its vicinity ; that one block of houses contiguous to it had been in a greater proportion productive of malignant fever, and more by one half than what has occurred in the neighbourhood : This has not been the effect of contagion, or else it would have diffused its agency in a more equal and diffusible proportion. We must then conclude that, in addition to the low and unhealthy condition of *Old Slip*, some other causes are to be corrected in the block of houses to the west of it. And here I beg to be permitted to suggest, that the Board of Health should in future be authorized to cause many old and decayed buildings with their premises to be carefully examined, and if found so far injured by age, or deprived of ordinary ventilation and conveniences, as to be untenant-

able in point of wholesomeness and cleanliness, that they should *declare* the same not to be used or occupied, under a proportionate penalty to the owner, until sufficiently repaired, &c. It may be observed, indeed, that houses on lots so well situated for business and trade of every kind, are in general left in the most perishing condition, because they can always command a good rent. On the other hand, it would be no more than right, that the guardians of the public health should interdict such places or dwellings which may be rendered sickly, and become the abode of infection; just as admiralities and civilized governments, in all parts of the world, have the right of detaining in port any vessel that is found and declared to be *sea-unworthy*.

We have heard of a project for disconnecting all the piers in the East River from the wharves, and throwing bridges on every one of them, and also for filling up a part of the docks, and digging all of them at a greater depth than that of low water mark. To these judicious improvements, I cannot but give my hearty approbation; but one more and the last, perhaps unattainable from its magnitude, and the immense extent of our port lines in both rivers, would be that of constructing piers and wharves with hewn stone only.

Quarantine laws, and shipping.—The principles of quarantine laws respecting vessels from suspected ports, should be regulated only by the healthy or unhealthy condition of their crews, and by the nature of their cargoes.

Vessels from distant countries are certainly injured by long quarantine detentions. And after confinement, a healthy crew require the enjoyment of the land influence, exercise and activity; or else in a state of rest,

inactivity, discontent, and without work, a ship's company seldom fail experiencing diseases, before their quarantine has expired. On the other hand, should a ship be in a foul condition, it is evident that quarantine detention must aggravate the cause without even removing the effects. I conclude therefore that so much must be taken from the quarantine laws against the danger of human contagion, and so much be added against that of infection arising from foul ships and cargoes. A long experience in this or other Lazarettos of the United States, has proved that foul ships after repeated purifications, when admitted into port, can still generate yellow fever, and disseminate its effects among the people of neighbouring habitations. Let us then infer, that no ship suspected to breed malignant fevers should be admitted into port; the inference of the case cannot be erroneous, if the nature of the cargo and occurrences at sea, are taken into proper consideration; by this it will be found, that no greater proof can exist of the foul state of the ballast of a ship, (admitting that the cargo is sound) than the spontaneous generation of yellow fever during the voyage, and which will still be more easily reproduced when the same vessel is in port, than when exposed to ventilation.

The Lazaretto regulations therefore for sickly crews, foul vessels, and damaged cargoes, during the warm months of the year, must have for their principal objects, 1st, the prompt unloading of cargoes to be kept in stores, or to be sent in lighters to the city, if in a sound condition: 2dly, to ascertain the foul state of every vessel, to be either effectually corrected, or indefinitely detained, until all offensive filth collected between the ballast is removed.

The Board of Health.—My next and last observations are on the Board of Health, whose powers do not certainly seem adequate to the exigencies of a calamitous time, unless they are assisted by the authority of the corporation, and by the concurrent good will of an intelligent community. An institution of this kind should also contain as many individuals of experience and scientific knowledge, as might silence the jarrings of temporary prejudices or theories. It is not my intention to claim for professional men a preference in the composition of a Board of Health, to the beneficial wisdom and good sense of those who have this year so successfully discharged the trust committed to their care; but it were desirable that no incertitude should occur in the measures which may eventually become necessary, nor that the Board of Health might occasionally be obliged to resort to the opinions or advice of private individuals, who themselves may be subject to error. The operations of a Board of Health are also of such importance as to require secrecy for the good of the public, as well as for the prevention of unnecessary alarms, in cases where danger can only be suspected. During the existence of an epidemic, private views and the interest of individuals afflicted with it, often makes it extremely unpleasant for them to become objects of observation and of danger to their fellow-citizens. This natural impression has even frequently aggravated the danger of their lives, or erected an insurmountable barrier to their recovery. In fine, it has disposed others either to elude or to oppose necessary health regulations. But such momentous evils would never take place, were the deliberations of the Board of Health confidentially to be carried on, and in secrecy. I have seen the advantages of this reserved mode under one of the best

organized Boards of Health, which is supposed to be that of Marseilles. The whole company of a ship infected with plague, were taken from a vessel laden with cotton, and transported into the Lazaretto hospital, where the greater part of them successively died; several labourers employed to ventilate the bales of cotton, afterwards became victims of the terrible disease, within the walls of the same institution, and contiguous to a city containing 120,000 inhabitants, without any body being apprized of the sad event, neither preyed upon by alarm, nor by the suspension of their prosperous business; nor did

———"The sullen door,
Yet uninfected, on its cautious hinge
Fearing to turn, abhor society.
Dependants, friends, relations, Love himself,
Savaged by wo; forgot the tender tie,
'The sweet engagement of the feeling heart.'

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